

## CLAIMS

1/ A coaxial structure microwave filter comprising a tube (1,1',1'') presenting a constant inner diameter and a fully metallized outer surface with, in the axial direction, a profile according to a periodic or constant function and an inner bar (2,2',2'') with a constant outer profile or following a periodic function, fully metallized characterized in that the tube and bar are realized in foam of a metallizable material, the largest diameter of the bar (3A-3D; 3A', 3B') being noticeable equal to the inner diameter of the tube.

2/ The filter according to claim 1, characterized in that the periodic function is a crenelation function, the crenelations having dimensions identical to or different from one crenelation to another.

3/ Process for manufacturing a filter according to a one of claims 1 to 3, in which the periodic function is realized by thermoforming the foam tube or foam bar.

4/ Process of manufacturing according to claim 4, in which the foam tube or foam bar is metallized at the surface by projection or by brush.